The cultivar is very drought resistant. Nikolasha has a high level of disease resistance, particularly to common bunt and loose smut; good field resistance to leaf, stripe. and stem rust; septoria leaf spot; and tolerant to root rot if sown after such fore crops as winter wheat and barley.

Nikolasha durum wheat is a widely adapted cultivar. The cultivar combines high potential productivity and drought resistance. In 2008, the yield in main trials at KRIA (Krasnodar) reached up to 6.28 t/ha against 4.74 t/ha for the check Kharkovskaya 17. In 2004–06, the average productivity of Nikolasha in the main trial was 5.14 t/ha, which was higher than that of the check cultivar Novodonskaya by 0.37 t/ha. In the Saratov field test in the 2010 spring wheat growing season when the hydrothermal coefficient for May–July in the Volga River Region was very low (0.1–0.2), which corresponds to an extremely strong drought, Nikolasha gave a grain yield of 0.75 t/ha, compared to 0.33 t/ha for the Saratovskaya zolotistaya check. This new cultivar has good physical grain parameters and strong gluten quality. For 2008–10, the average SDS-sedimentation index was estimated up to 50 mL, similar to that of Saratovskaya zolotistaya. Durum wheat Nikolasha is good achievement of ARISER and KRIA shuttle breeding program and according to the technological suitability for the pasta industry after the official testing it was also approved as an original cultivar for the dry, southeast areas of the Russian Federation (Saratov) in 2010 from the State Variety Testing Commission.

Department of Biotechnology, Laboratory of Cell Breeding, 7 Tulaikov Street, Saratov, 410010, Russian Federation.

Anther culture method of creating initial breeding stocks for triticale selection at ARISER.

T.I. Djatchouk, O.V. Khomyakova, V.N. Akinina, Yu.V. Italianskaya, N.F. Safronova, and L.P. Medvedeva.

The generation of doubled haploid (DH) plants via anther culture is an important biotechnological method, which permits significant shortening of the breeding process. This technique speeds up the time of cultivar development by several years. Different intervarietal and wheat-triticale hybrids (F_2–F_3 generation) based on the local triticale and wheat cultivars were used for haploid production in this study. The undoubled haploid plants were served by microclonal propagation using a somatic embryogenesis method.

The created DH lines were studied in a traditional breeding process. The winter hexaploid cultivar Student from the Volga region serves as standard cultivar. The triticale breeding program at ARISER works to solve the problems of reducing abiotic and biotic stress influence on the plant growth and increasing yield capacity and grain quality.

In a short time, using traditional and biotechnological approaches, some advanced DH lines of hexaploid triticale were developed. They differ from each other by several botanical and agronomical characteristics, yield capacity, quality of the grain, plant height, and vegetative period. In 2010, Sviatosar, a new winter triticale created by combining conventional and haploid breeding was submitted to the state variety tests. This cultivar was derived from cross of local line with the Krasnodar cultivar Strelets. The higher yield capacity of Svaiatosar is mainly due to a higher 1,000-kernel weight (Table 2).

Table 2. Grain yield, 1,000-kernel weight, and plant height of the new triticale cultivar Sviatosar.

	Grain yield (t/ha)					1,000-kernel weight (g)	Plant height (cm)
Cultivar	200	2008	2009	2010	Average	Average 2007–10	
Sviatosar	3.21	3.69	3.23	1.62	2.94	44.4	130
Student-St	2.81	3.17	2.89	1.08	2.48	38.2	130
LSD_{05}	0.36	0.38	0.30	0.30	0.30	2.4	—